



U.S. Department
of Transportation
**Federal Aviation
Administration**

Aviation Maintenance Alerts

AC No. 43-16A



**ALERT NO. 242
SEPTEMBER 1998**

**Improve Reliability-
Interchange Service
Experience**

CONTENTS

AIRPLANES

BEECH	1
CESSNA	3
DIAMOND	6
LAKE	6
LEARJET	7
LUSCOMBE	7
PIPER	7

HELICOPTERS

BELL	9
EUROCOPTER	12

AMATEUR, EXPERIMENTAL, AND SPORT AIRCRAFT

AVIAT	12
LITTNER	12
LONG-EZ	12
MOSLER	13
PITTS	13

POWERPLANTS AND PROPELLERS

WOODWARD	14
----------------	----

ACCESSORIES

MERL	14
------------	----

AIR NOTES

AIRWORTHINESS DIRECTIVES (AD'S) ISSUED IN JULY 1998	14
INFORMATION NEEDED	15
SUSPECTED UNAPPROVED PART (SUP) SEMINAR	15
CHANGES TO THIS PUBLICATION	16
IF YOU WANT TO CONTACT US	16
CHANGE OF ADDRESS	17
FAA FORM 8010-4, MALFUNCTION OR DEFECT REPORT	17
SUBSCRIPTION REQUEST FORM	17

**U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
WASHINGTON, DC 20590**

AVIATION MAINTENANCE ALERTS

The Aviation Maintenance Alerts provide a common communication channel through which the aviation community can economically interchange service experience and thereby cooperate in the improvement of aeronautical product durability, reliability, and safety. This publication is prepared from information submitted by those who operate and maintain civil aeronautical products. The contents include items that have been reported as significant, but which have not been evaluated fully by the time the material went to press. As additional facts such as cause and corrective action are identified, the data will be published in subsequent issues of the Alerts. This procedure gives Alerts' readers prompt notice of conditions reported via Malfunction or Defect Reports. Your comments and suggestions for improvement are always welcome. Send to: FAA; ATTN: Designee Standardization Branch (AFS-640); P.O. Box 25082; Oklahoma City, OK 73125-5029.

AIRPLANES

BEECH

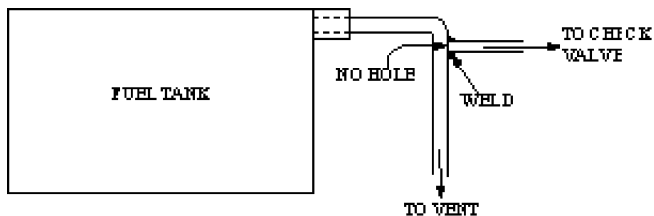
Beech; Model F33A; Bonanza; Improper Fuel Vent Installation; ATA 2810

The pilot reported the left fuel tank siphoned an excessive amount of fuel from the tank vent.

The technician discovered that the welded tube-tee assembly (P/N 33-921016-1) was not drilled which prevented the fuel tank vent air from reaching the antisiphon check valve.

To solve this problem, the technician drilled a hole at the proper location. (Refer to the following illustration.)

Part total time not reported.



Beech; Model T34A; Mentor; Landing Gear Failure; ATA 3230

During a landing approach, the landing gear failed to extend, and the circuit breaker opened. The emergency gear extension system failed to operate, and the pilot made a "gear-up" landing.

The technician discovered a broken cotter pin (P/N AN380-3-4). This cotter pin is used to safety the nut which secures the "worm gear" (P/N 45-810143) to the landing gear actuator. Due to operational vibrations, the nut became loose and allowed the "worm gear" to jam the landing gear extension mechanism. The cause of this failure was not given.

Part total time not reported.

Beech; Model A36; Bonanza; Propeller Spinner Bulkhead Damage; ATA 6113

While conducting routine maintenance, the technician noticed cracks in the aft propeller spinner bulkhead.

The technician removed the spinner and found three separate cracks. The cracks covered approximately 33 percent of the diameter of the aft bulkhead (P/N D5540) and were located near the mounting bolt holes.

The propeller spinner bulkheads on many different makes and models of aircraft have similar defects. The defects are compounded by improper installation procedures.

Part total time-736 hours.

Beech; Model A36; Bonanza; Chafing Aileron Control Cable; ATA 2710

During a scheduled inspection, maintenance technicians discovered that an aileron control cable link was chafing on the aileron cable.

Further inspection revealed that the aileron and rudder forward bungee spring was installed incorrectly. The spring was installed in such a way that caused the aileron link (P/N 35-524302) to chafe up and down against the aileron control cable. By reversing the attachment of the spring at the link end, the link is held away from the cable and chafing is prevented.

Part total time-1,494 hours.

Beech; Model A45; In-Flight Canopy Loss; ATA 5210

The aircraft was flight tested after the technician installed communication equipment. During the flight test, the canopy separated from the aircraft at approximately 3,000 feet mean sea level (MSL). The pilot made a safe landing, and the aircraft sustained only minor damage.

The submitter speculated that the canopy latching hooks were not properly engaged prior to takeoff. A more attentive preflight inspection may have prevented this incident.

Aircraft total time-320 hours.

Beech; Model B55; Baron; Electrical System Failure; ATA 2421

During flight, the aircraft lost all electrical power. The pilot made a safe emergency landing.

An inspection revealed:

- (1) both "field fuses" were burned,
- (2) the right engine alternator cooling fan was missing,
- (3) the output on one voltage regulator was 26.5 volts,
- (4) the right alternator output terminal was burned and frayed,
- (5) both alternators were improperly mounted,
- (6) the "plug shell" was missing from the left alternator, and
- (7) due to an improper electrical plug-pin connection, the rotor short circuited.

The submitter stated that proper, by-the-book maintenance could have prevented this incident.

Part total time not reported.

Beech; Model B60; Duke; Structural Corrosion; ATA 5300

While painting and refurbishing the interior of an aircraft, the technician discovered severe corrosion under the interior insulation and throughout the fuselage. The corrosion penetrated several of the structural members.

The submitter stated the insulation material was wet due to either condensation and/or a leaking window seal. The wet insulation material was held in contact with the metal fuselage and caused corrosion.

The submitter suggested that the manufacturer issue insulation kits which incorporate a moisture barrier. The submitter stated that during scheduled inspections, it is advisable to remove the insulation at several locations and inspect the area for corrosion.

Aircraft total time-4,478 hours.

Beech; Model 80; Queen Air; Abnormal Brake Operation; ATA 3242

The flightcrew reported that the right brake action on both the pilot's and the copilot's side was either "mushy" or nonexistent.

After extensive troubleshooting, the technician discovered a defective flexible pressure hose between the gear leg and the right wheel brake assembly. When the pilot applied the brake, sufficient pressure would partially operate the brake caliper, the flexible hose would swell, and the brake pressure would drop. Evidently, the brake hose did not rupture and was not leaking; however, hose failure was imminent.

All flexible aircraft hoses deserve close attention during scheduled inspections, and it is important to adhere to established life limits.

Part total time not reported.

Beech; Model B100; King Air; Engine Starter Failure; ATA 8011

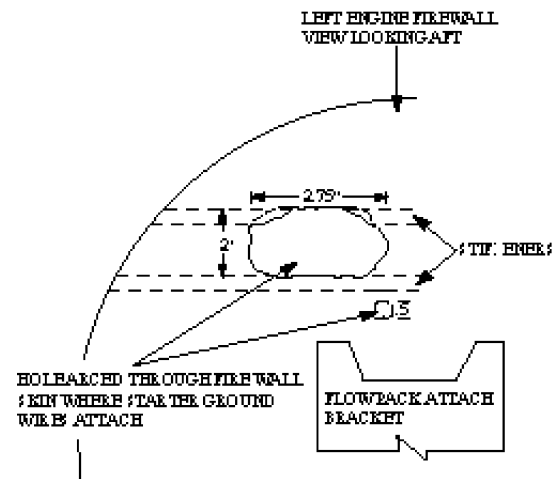
The pilot reported that the left engine starter would not turn the engine.

The technician changed the starter. However, even with the installation of the new starter, the engine would not turn. An electrical voltage test revealed the battery supplied 48 volts of electricity to the starter instead of the normal 24 volts. This aircraft design incorporates a feature that allows the selection of a "series start." The "series start" connects two batteries via a relay and delivers 48 volts to the starter for cold-weather operations. The technician inspected the relay located at the start-control panel, and the contacts were arced together. The technician replaced the relay, and the voltage reading at the starter was confirmed to be 24 volts; however, the engine still would not turn.

Further investigation disclosed that the starter ground wires were attached to a bracket (P/N 100-980023-1) which was partially separated from the firewall. The partial connection of the ground wire bracket to the firewall allowed a satisfactory electrical voltage test; however, the connection would not allow sufficient electrical power to turn the engine.

It appeared that the ground wire bracket became loose where it was attached to the firewall, which resulted in arcing, and the firewall was severely burned. (Refer to the following illustration.)

Part total time-9,896 hours.



Beech; Model B200; King Air; Landing Gear Anomaly; ATA 3230

The pilot reported that the landing gear system did not operate properly.

The technician investigated and found that one of the four landing gear motor brushes (P/N 115-380002-5) was severely worn. The brush displayed evidence of burning and was worn to the extent that the wire was exposed at the face of the brush. The submitter did not offer a cause for the defect.

Part total time-809 hours.

CESSNA

Cessna; Model 120; Defective Elevator Hinge Bearing; ATA 5520

During an annual inspection, the technician discovered a loose elevator hinge point.

Further investigation revealed that the right outboard elevator hinge bearing was severely worn. The inside diameter of the bearing inner race (P/N 042215) and the attachment bolt suffered most of the wear. The technician replaced the bearing and the attachment bolt.

Flight controls on older aircraft should be thoroughly inspected during maintenance.

Part total time-4,627 hours.

Cessna; Model 172R; Skyhawk; Firewall Cracks; ATA 5410

Information for the following article was furnished by the FAA, Aircraft Certification Office (ACO) located in Wichita, Kansas. This information resulted from FAA Safety Recommendations 98.093 and 98.094.

The technician discovered firewall cracks on two aircraft during routine inspections. The cracks were located on the lower left area of the firewall.

On one aircraft, the crack was located at the lower left leg of the battery tray. On the other aircraft, the crack was located at the base of the lower left cowling shock mount and was approximately 2 inches long.

The submitter stated that the firewall area should be given special attention during inspections and any time the engine cowling is removed.

Part total times-154 and 245 hours.

Cessna; Model 172R; Skyhawk; Erratic Fuel Quantity Indication; ATA 2842

The pilot reported that the fuel quantity indicator was operating erratically.

The technician discovered that the left and right fuel quantity sensors were installed in reverse order. The fuel quantity sensors have different part numbers which should be checked prior to installation. The submitter

speculated that the improper installation occurred when the aircraft was manufactured.

Aircraft total time-260 hours.

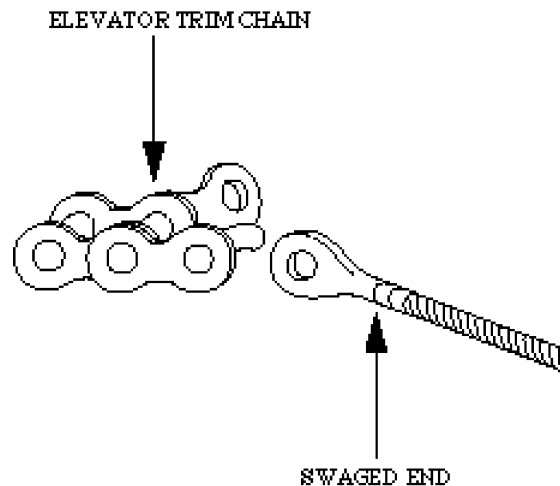
Cessna; Model 182G; Skylane; Elevator Trim System Failure; ATA 2731

The pilot reported that the elevator trim system was inoperative during flight.

The technician performed an inspection of the trim system which revealed that the pivot pin on the last link of the chain had separated from one of the side links. (Refer to the following illustration.)

Inspecting the elevator trim system chain assembly is difficult because it is located inside the center console; however, the submitter suggested expending extra effort during scheduled inspections.

Part total time-4,700 hours.



Cessna; Model A185F; Skywagon; Horizontal Stabilizer Structural Damage; ATA 5510

During an annual inspection, the technician discovered that the left and right horizontal stabilizer hinge reinforcements (P/N 0732101-4) were cracked.

The left hinge reinforcement was cracked from the aft edge to a fastener hole at the inboard lower tab. The right hinge reinforcement had similar cracks in both of the lower tabs. Another crack, which was not so obvious, ran along the lower reinforcement flange bend radius on the right side of the stabilizer.

The submitter stated this area should be carefully inspected on all aircraft.

Part total time-5,272 hours.

Cessna; Model T210N; Centurion; Door Seal Failure; ATA 3610

Approximately 6 minutes after takeoff, the pilot noticed smoke in the cockpit. All unnecessary electrical equipment was turned off, and a safe landing was made.

An investigation disclosed that a passenger seatbelt was caught in the door and damaged the inflatable pneumatic door seal. This allowed excessive pressure leakage of the pneumatic system, and the pneumatic system pump exceeded its duty cycle. The pump overheated and caused an electrical resistor (P/N RH-50) to burn.

The submitter stated a little extra care and attention could have prevented this defect.

Part total time not reported.

Cessna; Model 310D; Defective Horizontal Stabilizer Mount Bracket; ATA 5510

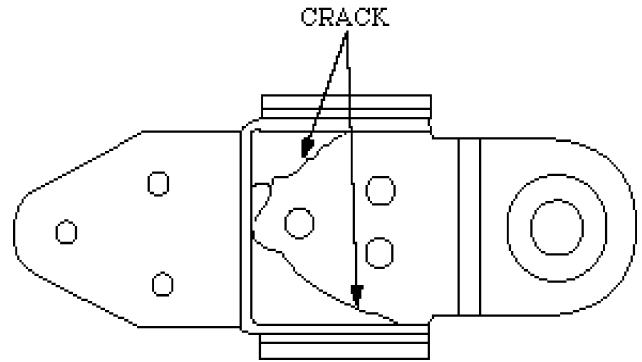
During an annual inspection, the technician discovered a loose left horizontal stabilizer mount bracket.

The bracket is used as the outboard elevator attachment point. The attachment rivets were loose, and the mount bracket (P/N 0832000-56) was cracked. When the mount bracket was removed, it fell into two pieces. (Refer to the following illustration.)

The submitter suggested that an inspection of the horizontal stabilizer mount bracket should be conducted during each annual inspection to

detect loose and/or fretting rivets. The cause of this defect was not known.

Part total time-6,000 hours.



Cessna; Model 340A; Defective Rudder Trim Turnbuckle; ATA 2721

While adjusting the rudder trim control cables, the technician discovered a defective turnbuckle (P/N MS21251-B25).

The turnbuckle was split down both sides of one end. The turnbuckle male ends were not bottomed out when this defect was discovered; however, the submitter speculated that they may have been overtightened at a prior time.

The submitter stated all turnbuckles should be thoroughly inspected during maintenance and scheduled inspections.

Part total time-3,086 hours.

Cessna; Model 421C; Golden Eagle; Defective Wing Flap Control Cables; ATA 2750

The submitter operates a fleet of twin-engine Cessna aircraft, and the service history for the aircraft indicates that the wing flap cables have a propensity to fray. The fraying damage is not visible until the cable is removed.

The submitter recommends that other operators change wing flap cables after 4,000 hours of operation.

If one cable fails during flight, a split-flap condition may occur and cause loss of aircraft control.

Part total time-4,251 hours.

Cessna; Model 421C; Golden Eagle; Defective Aileron Structure; ATA 5751

During a scheduled inspection, the technician noticed that the aileron skin was loose. After further investigation, the technician discovered that the stiffeners on both ailerons were debonded. The stiffeners are bonded to the outer skin. The submitter stated there is not a manufacturer-approved repair procedure.

The submitter stated the aileron skins should be inspected at every opportunity.

Part total time-4,463 hours.

DIAMOND

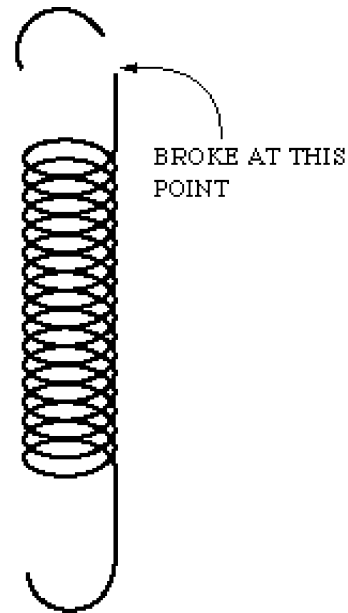
Diamond; Model DA 20A1; Canopy Assist Spring Failure; ATA 5210

When the pilot opened the canopy, he heard an abnormal noise, and the canopy was difficult to open.

The technician found one of the canopy-assist springs (P/N 20-5600-09-02) broken. The spring failed at one end at the point where the radius for the attachment hook begins. (Refer to the following illustration.)

This is the second occurrence of spring failure on this aircraft. It was speculated that there may be a metallurgical problem built into the spring during the manufacturing process.

Part total time-900 hours.



LAKE

Lake; Model LA 4-200; Buccaneer; Electrical System Failure; ATA 2421

During flight, the alternator failed, and the pilot made a safe landing using battery power.

Evidently, after an engine change, the hose (P/N 2-6050-27) that connects the alternator cooling port to the flexible duct (SCAT hose) was not installed. The alternator cooling air hose is constructed of a nonconductive material. Without the air hose, the steel wire in the flexible duct (SCAT hose) chafed against the alternator field terminal and caused the alternator and the voltage regulator to fail.

Part total time not reported.

LEARJET

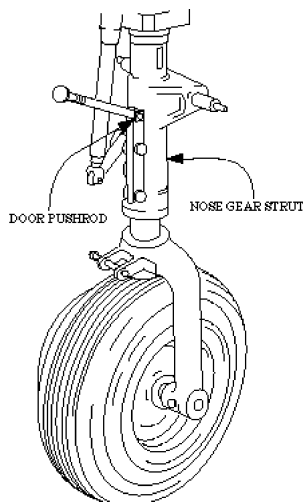
Learjet; Model 35A; Centry III; Improper Installation of Nose Landing Gear Parts; ATA 3230

This report was submitted by a large repair station. The technician found that the nose landing gear door mechanism push-pull rod attachment bolt was not correctly installed.

The nose gear door actuating rod attachment bolt (P/N AN24-30) head was gouging the skin at frame 5, fuselage station (FS) 160.77. In accordance with the manufacturer's maintenance manual, the bolt head should be facing outboard, and when the bolt is installed with the head outboard, clearance between the bolt head and the frame skin will be maintained. (Refer to the following illustration.) The manufacturer's maintenance manual does not contain a "NOTE" or "CAUTION" concerning the proper orientation of the bolt head.

The submitter suggested that the manufacturer consider issuing written instructions with a "NOTE" or "CAUTION" related to the proper bolt head orientation. The submitter has discovered a total of five occurrences of this defect.

Part total time not reported.



LUSCOMBE

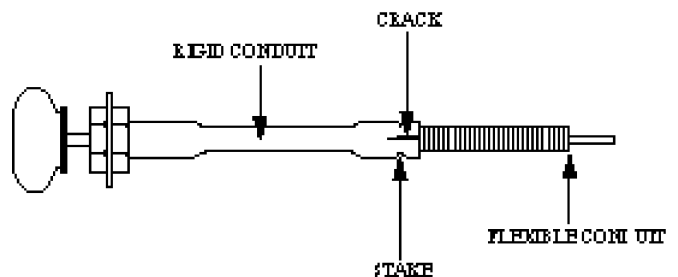
Luscombe; Model 8A; Silvaire; Engine Control Failure; ATA 7603

During flight, the aircraft lost engine-throttle control. The pilot made a safe off-airport landing.

The technician discovered a crack in the rigid throttle-control conduit. The crack allowed the flexible conduit to separate from the fixed-conduit housing. (Refer to the following illustration.)

The submitter stated this area deserves attention during scheduled inspections.

Part total time not reported.



PIPER

Piper; Model PA23-250; Aztec; Hole in Exhaust Tube; ATA 7810

During a "post 50-hour runup," the technician heard an unusually loud exhaust noise coming from the front of the number one engine.

The technician removed the cowling, inspected the forward crossover tube heat shroud, and found a 2-inch hole in the tube. The hole directed hot exhaust gases toward the lower case and sump area. This condition may have caused a fire.

Part total time-2,660 hours.

Piper; Model PA24-250; Comanche 250; Faulty Gear Circuit Breaker; ATA 3233

The pilot selected the gear down setting, but the wheels remained in the wheel well. The pilot used the emergency landing gear system and made a safe landing.

The technician determined that the gear motor circuit breaker allowed the gear to cycle in a "no-load" situation. When the landing gear selector was placed in the "up" position, the circuit breaker stopped almost all current flow without actually popping.

The technician replaced the 30-amp circuit breaker which solved the problem.

Part total time-unknown.

Piper; Model PA28-181; Archer II; Broken Bolt at Alternator Attach Point; ATA 2430

During an oil change, the technician discovered a bolt with a secure nut protruding from the base of the alternator (P/N A111810).

Closer inspection revealed the head of the bolt (P/N 757-388) had separated from the shank and allowed the bolt to vibrate forward toward the starter flywheel.

Part total time-unknown.

Piper; Model PA31-350; Chieftain; Ineffective Gear Downlocks; ATA 3230

When the pilot extended the main landing gear, it would not lock in the "down" position. The pilot made a safe landing.

After placing the aircraft on jacks, the technician discovered the downlocks were not lubricated and were stuck in the unlocked position.

The operator required the technician to clean the landing gear every week. Apparently, the cleaning process removed the lubricant.

The submitter stated personnel should properly lubricate all landing gear pivot points after each cleaning process.

Part total time-4,352 hours.

Piper; Model PA31-350; Chieftain; Failed Hose Assembly; ATA 3231

When the pilot extended the landing gear, the nose gear "down-and-locked" indication did not appear. The pilot reported the landing gear handle offered less resistance when moved to the "neutral" position. The pilot reported the emergency gear extension procedure failed. When the pilot landed the aircraft, the nose gear collapsed. The pilot escaped injury, and the aircraft received relatively minor damage.

The submitter stated the right main gear actuator hose (P/N 465-204) failed which caused the loss of a substantial amount of hydraulic fluid.

Part total time-5,945 hours.

Piper; Model PA31-350; Chieftain; Broken Bolt at Starter Bendix; ATA 8011

During an inspection, the technician discovered that the right engine's starter would not engage. A closer inspection revealed the motor housing (P/N MHB4014) had separated from the Bendix housing due to a broken attach bolt.

Part total time-547 hours.

Piper; Model PA32RT-300; Lance II; Gear Trunnion Crack; ATA 3213

After the left main gear strut collapsed, the technician inspected the aircraft and found a cracked and leaking trunnion assembly (P/N 67926-12). The crack extended approximately 90 percent around the trunnion.

The submitter suspects fatigue caused the crack. Airworthiness Directive (AD) 94-13-11 addresses this problem; however, the AD only pertains to PA34 and PA44 aircraft. The submitter stated all aircraft with similar castings should be thoroughly inspected, even aircraft which are not specifically addressed in the AD or in the related Service Bulletin (SB) 787B.

Part total time-4,715 hours.

**Piper; Model PA32R-301; Saratoga II;
Air-Conditioner Drivebelt Failure; ATA 2100**

The submitter stated the air-conditioner drivebelt (P/N 73965010) has a poor service history.

The drivebelts broke and were replaced at 135 hours on 4/4/96, 213 hours on 7/16/96, 283 hours on 7/25/97, and 504 hours on 6/16/98.

The submitter stated the drivebelts were replaced in accordance with proper maintenance procedures; however, the service life for the drivebelts remained poor.

Part total time-as shown.

**Piper; Model PA34-220T; Seneca V; Landing
Gear Actuator Failure; ATA 3233**

The submitter inspected all the actuators on this aircraft for "O-ring" damage after another aircraft experienced two "O-ring" failures.

The submitter stated the factory installed incorrect "O-rings" on all three actuator pistons. The incorrect "O-rings" were damaged (rolled and scuffed); however, they did not fail. The submitter also stated the undamaged areas on the incorrect "O-rings" were abnormally thin.

The submitter recommended that all owners and operators inspect their aircraft and make sure the correct "O-rings" (P/N 484 706) are installed.

Part total time-142 hours.

**Piper; Model PA46-350P; Malibu Mirage;
Cracked Flap Bellcrank; ATA 2750**

While performing an annual inspection, the technician discovered the right flap bellcrank (P/N 82905-03) had cracked in half.

If this problem had gone undetected, the resulting "split-flap" condition may have caused a loss of aircraft control.

The submitter recommended that operators and technicians give this area close attention during maintenance and inspections.

Part total time-701 hours.

HELICOPTERS

BELL

**Bell; Model 205A-1; Engine Spur Gear Failure;
ATA 7200**

This article was submitted for publication by the FAA, Rotorcraft Certification Office, ASW-170, located in Fort Worth, Texas.

The article is printed exactly as it was issued.

The following is a revision to the text of Operational Safety Notice (OSN) 205-98-304 dated April 30, 1998. Revision A was issued June 2, 1998, and affects all serial number helicopters.

This OSN was issued to advise operators of indications and proper reactions to take in the event of an engine spur gear failure. Allied Signal, the engine manufacturer, has issued Service Letter (CSL) 97-7, dated December 1, 1997, which explains the cause of spur gear (P/N 1-070-062-04) failures. It also states operational conditions that may lead to these failures.

Since the issuance of CSL 97-7, the U.S. Army grounded their fleet of UH-1H helicopters due to concerns they have

about the failure of N2 spur gears. Actions being taken consist of engine vibration inspections, possible installation of interim parts, and redesign of existing spur gear/gear drive assemblies.

The typical N2 spur gear failure sequence is:

1. Aircraft right yaw.
2. N2 tachometer RPM dropping to zero.
3. Torque meter indications dropping to zero.
4. Engine fuel control malfunction failure to the high side.
5. Main rotor RPM increase.
6. Engine parameters EGT/N1 increasing.

Additional indications may be:

1. Engine chip detector caution light illumination.
2. Engine oil pressure gauge reading zero.

The proper reaction to this nonstandard emergency procedure is:

1. Increase collective to load rotor, and sustain rotor RPM below the red line.
2. Reduce throttle until normal continuous operation rotor RPM is obtained. Control the throttle manually.

CAUTION: Acceleration, deceleration, and overspeed control are not provided in this emergency condition. Do not move power control (throttle or collective) rapidly. Engine overspeed, overtemperature, or flame could result.

3. Land as soon as possible.

NOTE: In the above nonstandard emergency condition, the N2 power turbine will continue to drive the rotor without N2 tachometer indication.

If the N2 spur gear fails and severely damages other accessory drive gears, the possible indications may be:

1. Severe vibration/grinding noises.
2. Loss of drive to N1 gear box which

results in fuel control being nonoperational and engine shutdown due to fuel starvation.

Bell; Model 206L-4; Possible Collective Linkage Failure; ATA 6700

This article was submitted for publication by the FAA, Rotorcraft Certification Office, ASW-170, located in Fort Worth, Texas.

Bell has issued Alert Service Bulletin (ASB) 206-98-110, dated May 6, 1998. This ASB states there are two methods of manufacture used to produce the collective idler links (P/N 206-010-446) and collective levers (P/N 206-010-447). The preferred method for manufacturing these parts is forging. However, in some cases, these parts were manufactured by machining the parts from rolled plate stock. The airworthiness life of the machined parts is less than that of the forged parts.

Part I of the ASB gives instructions for identifying the different part number collective idler links and the collective levers and clarifies the airworthiness lives. Part II of the ASB gives the authority to reidentify specific collective idler links and collective levers to the later part number.

Bell; Model 206L-4 and 407; High Altitude Tail Rotor Installations; ATA 6400

This article was submitted for publication by the FAA, Rotorcraft Certification Office, ASW-170, located in Fort Worth, Texas.

The following text is from the Bell Helicopter Textron Operational Safety Notices (OSN) 407-98-5 and 206L-98-37, both dated May 27, 1998. These documents were issued to all Model 407 helicopter operators and operators of Model 206L helicopters with the "High Altitude Tail Rotor Kit" installed.

Bell has received two reports of incidents in which a Bell Model 407 tail rotor blade contacted the tail boom during shutdown.

These OSN's were issued to stress the importance of adhering to the procedures contained in the applicable flight manual. The Model 407 flight manual clearly states that for engine shutdown, "position the collective fully down, and the cyclic and pedals should be centered."

Testing performed by Bell suggests that significant departure from centered controls, particularly the tail rotor pedals, during shutdown increases the risk of inadvertent tail boom contact by the tail rotor.

The intent of these OSN's was also published in Information Letter 407-98-15, dated April 29, 1998. Operators of Model 206L-4 aircraft were notified because of the similarity with the high altitude tail rotor kit (P/N 206-704-722) installed on some aircraft.

Bell; Model 407; Door Latch Failures; ATA 5210

The following information was furnished by the FAA, Rotorcraft Certification Office, ASW-170 located in Fort Worth, Texas.

The manufacturer issued Alert Service Bulletin (ASB) number 407-98-18, dated May 27, 1998, concerning the crew and passenger door latch assemblies. This ASB is applicable to aircraft serial numbers 53000 through 53228.

Bell received reports stating that rod assemblies were disengaging from the door handle. This prevents anyone inside the helicopter from opening the door. Owners, operators, and maintenance personnel should consult this ASB to make modifications to the attachment two-rod assemblies in each crew and passenger door latch assembly (P/N's 20898-401, -402, -405, and -406).

Bell; Model 407; Vertical Fin Modification; ATA 5533

The following information was furnished by the FAA, Rotorcraft Certification Office, ASW-170, located in Fort Worth, Texas.

Bell has issued "Revision A," dated June 26, 1998, to Alert Service Bulletin (ASB) 407-98-17 which was dated April 3, 1998. Revision A includes the following changes:

The subject section has been changed to show part number 206-020-113-223 because it is more easily identified with the bonded identification strips on the fin. Fin assembly part number 206-020-113-223 is a subassembly of both of both part numbers 206-020-113-221 and -209. Note: Fins part number 206-020-113-223A or B were installed on production helicopters. Fins, part number 206-020-113-223S, were supplied as spares.

The "Helicopters Affected" section has been changed to show the bulletin effectivity in relation to the serial number of the fin assembly instead of only the aircraft serial number. The affected helicopters have been expanded to include all 407 helicopters through S/N 53274. These changes were made to make sure that all fins that are possibly damaged are inspected. For example, fins that have been moved from an affected helicopter to one that was not affected.

The "Accomplishment Instructions" of the ASB now gives instructions on how to locate the fin part number and serial number before accomplishment of "Part I," and also includes a "Part III," identification of fin assemblies. "Part III must be accomplished. Operators who have accomplished ASB 407-98-17, are now required to comply with Part III of Revision A."

EUROCOPTER

Eurocopter; Model AS-350; Ecureuil; Defective Engine Fire Detection System; ATA 2612

During a 500-hour inspection, maintenance technicians discovered that three of the six engine fire detectors were defective. This helicopter had a Turbomeca, Arriel 1D1, engine installed.

Two of the fire detectors (P/N 9560129980) displayed signs of overheating, and the other detector had a low "ohm" reading during an electrical test. These three fire detectors were replaced in accordance with the Turbomeca maintenance manual. Since this is the only form of fire detection, it was recommended a functional test of the system be conducted at intervals less than every 500 hours required by the maintenance manual.

Part total time-989 hours.

AMATEUR, EXPERIMENTAL, AND SPORT AIRCRAFT

AVIAT

Aviat; Model A-1; Structural Tubing Chafing; ATA 5500

During a scheduled inspection, the technician discovered a clevis (P/N 53875) and a bolt (P/N 50025) chafing on the empennage structural tube.

The clevis and bolt were attached to the elevator trim horn link (P/N 3-5274-001). The clevis was bent and misaligned which caused this defect.

The submitter stated that the clevis should be "joggled" to deflect the elevator trim cable inboard and provide proper clearance.

It would be wise for all owners/operators to inspect the aircraft for this condition.

Part total time-90 hours.

LITTNER

Littner; Model Super Emeraude; Wing Spar and Rib Separation; ATA 5711

The owner found several wing ribs that had separated from the main (front) wing spar.

During landings, the main landing gear design places a torsional load on the main spar. The main landing gear is installed at an angle forward of the main wing spar. The main landing gear is attached to the wing ribs, and the wing ribs are attached to the spar with adhesive. During rough landings, a twisting moment on the wing ribs may result in adhesive failure. Adhesive failures may be indicated by:

- (1) "squeaks" when the wing is rocked,
- (2) slack or wrinkles in the fabric,
- (3) separation of the wing skin from the root rib,
- (4) separation of the shear web from the spruce portion of the spar, and/or
- (5) a crack in the shear web.

To make the center section of the wing rigid, the submitter suggested adding a shear web to the ribs and corner blocks where they meet the main and aft spars.

Aircraft total time-1,100 hours.

LONG-EZ

Long-EZ; Model CM-30; Defective Engine Fuel System; ATA 7320

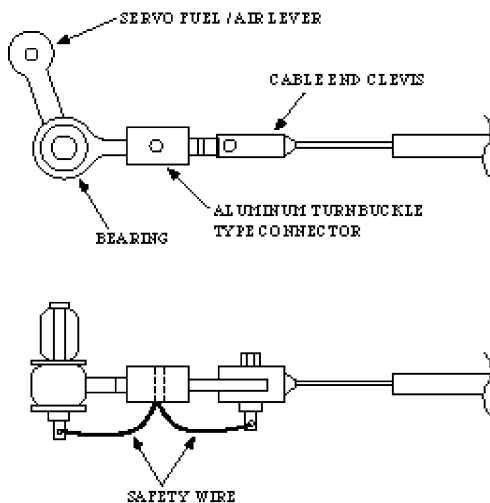
This aircraft incorporated a Textron Lycoming Model IO-360 engine. Following a positive 1-G maneuver, the pilot reported the engine power manifold pressure degraded to 19 inches Hg. The pilot was unable to restore the manifold pressure. The remaining engine power was sufficient to maintain flight, and the pilot

made a safe landing. After landing, the fuel mixture control was pulled aft; however, the engine continued to operate.

The technician discovered that the fuel injection servo (P/N 2524054) cable clevis end was binding the linkage at the attachment point. (Refer to the following illustration.) The fuel servo markings indicated that it was equipped with a (-9) soft stem which is prone to "hanging up" during positive-G maneuvers. The technician removed the cable clevis end and discovered that the stem was a (-10) hardened type, and the fuel injector servo displayed evidence of corrosion.

After the technician cleaned the servo and installed a new cable clevis end, all the systems functioned correctly.

Part total time not reported.



MOSLER

Mosler; Model 2 Cylinder; Exhaust System Defect; ATA 7810

The "Y-type" intake manifold cracked at the flange joint where it attached to the cylinder head.

The submitter stated, "This condition will result in a complete power loss." It appeared the exhaust flanges were welded only on the front side which may have allowed operational stress to be imposed on the aft part of the flanges.

The submitter recommended welding the flanges both sides and installing a supporting strap from the carburetor to the engine to dampen operational vibrations.

Part total time since overhaul-160 hours.

PITTS

Pitts; Model S1C; Improper Flying Wire Tension; ATA 5720

During a scheduled inspection, the technician discovered several loose wing drag wires and anti-drag wires.

The technician opened additional inspection ports in the wings and discovered that eight of the drag wires and five of the eight anti-drag wires were loose. After additional wing access holes were made at each of the wire attachment locations, the technician discovered the nuts that secure the wires, were loose. The wire nuts may have loosened due to vibration. Depending on the flight parameters of the aircraft, both sets of flying wires are designed to carry a specific load, and it is very important that all of the wires are properly tightened and secured.

The submitter recommended that all owners of aircraft using flying wires, especially this make and model, check the wires for proper tension and security. The installation of adequate inspection ports during construction of an aircraft may save the grief of cutting inspection holes at a later time.

Aircraft total time-668 hours.

POWERPLANTS AND PROPELLERS

WOODWARD

**Woodward Propeller Governor;
Model 895490-8; Internal Failure; ATA 6122**

During flight, the annunciator panel showed that the propeller momentarily entered the BETA range. The discrepancy log did not indicate any other problems during this flight.

On the next flight, while taxiing for takeoff, the same propeller made an uncommanded pitch change toward the high pitch, low RPM position; the interturbine temperature indicated redline; and the pilot shut down the engine.

The technician discovered that the Woodward propeller governor (P/N 895490-8) failed and caused a series of events: Metal filings exited the propeller governor through the oil passages clogging the Negative Torque System (NTS) check valve, and eliminating the oil supply to the negative side of the torque sensor. A clogged adapter (P/N 3101708) prevented the oil supply from reaching the positive side of the torque sensor resulting in a plugged turbine bearing oil jet. The plugged turbine bearing oil jet contaminated and disabled the feather valve making it impossible for the NTS to function, and preventing the propeller from being feathered manually.

Part total time-2,138 hours.

ACCESSORIES

MERL

Merl ELT-10; Model BP-1010; Battery Pack Explosion; ATA 2562

The emergency locator transmitter (ELT) battery pack exploded approximately 20 minutes after installation. During the following hour, there were several subsequent explosions. A technician injured his eye during one of the explosions.

The technician stated the transmitter was in the "off" position, and the battery pack was disconnected from the transmitter. The technician followed the manufacturer's installation instructions. The cause of the explosion is under investigation.

Until additional information is available, continue to use caution under similar circumstances.

Part total time-new.

AIR NOTES

AIRWORTHINESS DIRECTIVES (AD'S) ISSUED IN JULY 1998

AD 98-15-19 Aeromot-Industria Mecanico AMT-200 powered gliders — requires replacing hoses in engine oil system.

AD 98-15-16 Bombardier-Rotax 912F series reciprocating engines — requires installation of an improved fuel pump and fuel supply tube.

AD 98-16-04 Cessna 180, 182, and 185 series airplanes — requires inspecting between wing station for an angle stiffener at lower wing spar splice.

AD 98-15-20 Glaser-Dirks Flugzeugbau DG-500M gliders — requires inspecting center of gravity tow release cable pulley for correct positioning.

AD 98-15-18 Maule M-4, M-5, M-6, M-7, MX-7, and MXT-7 series, MT-7-235 and M-8-235 airplanes — requires inspecting wing lift struts for internal corrosion.

AD 98-15-13 Raytheon (Beech) 90, 100, 200, and 300 series airplanes — requires checking airplane maintenance records for fuel hose replacements.

AD 98-16-03 SOCATA — Groupe Aerospatiale models TB9 and TB10 airplanes — requires inspecting wing front attachments on wing and fuselage sides for cracks.

AD 98-15-24 Stemme KG Model S10-V sailplanes- requires replacing propeller blade suspension forks with parts of improved design.

INFORMATION NEEDED

Airframe and Powerplant mechanics seeking an Inspection Authorization (IA) may be omitting information from FAA Form 8610-1, Mechanics Application For Inspection Authorization, which is needed by the FAA, Airmen Certification Branch, AFS-760.

Many times, AFS-760 requests additional address information after FAA Form 8610-1 has been routed through the Flight Standards District Office (FSDO) which caused additional cost and time for the applicant and AFS-760.

If the applicant completes Block 2 of FAA Form 8610-1 with a business address, a P.O. Box, or a rural route, the applicant

should also furnish a physical address where the applicant can be reached during normal business hours.

If you prefer using a separate mailing address (other than a residential address) to receive Airworthiness Directives and other FAA information, you must furnish AFS-760 with a residential address for the airmen record.

This action is required by the FAA Drug Enforcement Assistance Act of 1988.

SUSPECTED UNAPPROVED PART (SUP) SEMINAR

As announced in previous editions of the Alerts, the Designee Standardization Branch, AFS-640, is once again presenting the Suspected Unapproved Part (SUP) seminar. A schedule of the seminars and information for requesting a SUP seminar in your area can be found below.

Seminar dates will be announced in the Alerts, the Designee Update newsletter, and on the Internet under FedWorld.gov. You may access the FedWorld BBS directly at (703) 321-3339. You may access the Alerts through the Internet, using the Regulatory Support Division, AFS-600, "HomePage" at the following address.

<http://www.mmac.jccbi.gov/afs/afs600>

The seminar will discuss the following:

1. Introduction to the policy of the Suspected Unapproved Part Program Office, AVR-20.
2. What is an approved part/unapproved part?
3. How can approved parts be produced?
4. What is a suspected unapproved part?
5. How is a suspected unapproved part reported in accordance with FAA Order 8120.10A, Suspected Unapproved Parts Program, and utilizing FAA Form 8120-11,

Suspected Unapproved Parts Notification?

- 6.** How do you determine the status of parts?
- 7.** What is the procurement process?
- 8.** How do you use the Internet and FedWorld to find a list of unapproved parts?

The cost of this 1-day, 8-hour seminar is \$60. The seminar may be used for the Inspection Authorization (IA) renewal training requirement specified in Title 14 of the Code of Federal Regulations (14 CFR) part 65, section 65.93(a)(4).

The seminar is open to the aviation industry. Anyone wishing to attend may telephone (405) 954-0138. Payment is required in advance by using VISA, MasterCard, or a check.

When scheduling attendance, please reference "AFS-75."

SCHEDULE FOR SUSPECTED UNAPPROVED PART (SUP) SEMINARS

<u>Seminar No.</u>	<u>1998</u>	<u>Location</u>
759809	Sep 16	Springfield, IL
759901	Oct 21	Rochester, NY
759902	Nov 18	Wichita, KS

If you require an ADDITIONAL SUP seminar, please write to: FAA, ATTN: Elmer Hunter (AFS-640), P.O. Box 25082, Oklahoma City, OK 73125. Depending on manpower and the availability of AFS-640 personnel, the requests for additional SUP seminars may be authorized. The registration process is the same as that previously discussed in this article. If you have specific questions regarding an ADDITIONAL SUP seminar, please contact Elmer Hunter at (405) 954-4099.

CHANGES TO THIS PUBLICATION

We have created a new Internet web site which includes an electronic version of FAA Form 8010-4, Malfunction or Defect (M or D) Report. You may use the electronic

version to send M or D reports to us. The web site also includes a search function for older copies of the Alerts. The address for this web site is:

<http://www.mmac.jccbi.gov/alerts/>

In the future, we will establish an E-Mail distribution system for the Alerts. When the system is in place, we will strongly urge you to use it. The system will save printing and mailing costs associated with delivering paper copies. If you switch to the E-Mail distribution system, please tell us by using the subscription form in the back of this publication, so we can delete your name from the paper copy distribution list. We will continue to print paper copies for those who do not have access to the Internet and E-Mail.

If you like the idea of receiving the Alerts via the E-Mail distribution system, please let us know, so we will know how many readers will take advantage of the system. You may contact Phil Lomax by any of the means listed in the following article.

IF YOU WANT TO CONTACT US

If you want to contact the staff of this publication we welcome your comments, suggestions, and questions. Also, you may use any of the following means of communication to submit reports concerning aviation-related occurrences.

Editor: Phil Lomax
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ga-alerts@mmacmail.jccbi.gov

AFS-600 HomePage Internet address:

<http://www.mmac.jccbi.gov/afs/afs600>

Current and back issues of this publication may still be obtained from the FedWorld Bulletin Board System (BBS) via the Internet at the following address:

<http://www.fedworld.gov/ftp.htm>

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The distribution list for the Alerts is maintained independently from other FAA distribution lists; therefore, it is very important to notify us when your address changes. Please complete the Subscription Request Form located on the last page of every edition of the Alerts. Be sure to write your name EXACTLY as it appears on the current label.

Also, if you are receiving more than one copy of each edition, please contact Phil Lomax at (405) 954-6487.

FAA FORM 8010-4, MALFUNCTION OR DEFECT REPORT

For your convenience, FAA Form 8010-4, Malfunction or Defect Report, will be printed in every issue of this publication. You may complete the form, fold, staple, and return it to the address printed on the form. (No postage is required.)

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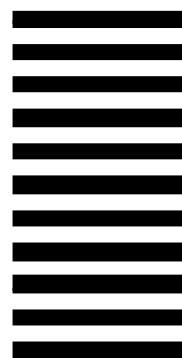


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